

**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE**

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R036XC109NM

Site Name: Malpais (WP-3, WP-2)

Precipitation or Climate Zone: 10 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

Topography of this site is nearly level to moderately sloping, with slopes ranging to 15 percent. The terrain may frequently be interrupted by basalt outcrops, rocks, or boulders. It occurs as lava flows, usually across broad areas and over uniform slopes. Low hills, narrow breaks, or knobs may however, break this uniformity in slopes, as may dissecting arroyos, and potholes. Elevation range from about 5,000 to 7,500 feet above sea level.

Land Form:

1. Lava flow
2. Lava plain
- 3.

Aspect:

1. N/A
- 2.
- 3.

	Minimum	Maximum
Elevation (feet)	5,000	7,500
Slope (percent)	0	15
Water Table Depth (inches)	N/A	N/A
Flooding:	Minimum	Maximum
Frequency	N/A	N/A
Duration	N/A	N/A
Ponding:	Minimum	Maximum
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

Average annual precipitation varies from about 12 inches to just over 16 inches. Substantial fluctuations from year to year are common, ranging from a low of about 6 inches to a high of over 30 inches. Approximately one-half of the annual precipitation comes in the form of rainfall during the months of July, August, and September, although wintertime precipitation in the form of snow, sleet, or rain is sometimes significant. Spring and late fall months are normally dry.

The average frost-free period ranges from about 165 to 190 days and extends from approximately the third or fourth week in April to mid October. Average annual air temperatures are about 56 degrees F. Summer maximums can exceed 100 degrees F and winter minimums on occasion go below zero. Monthly mean temperatures generally exceed 70 degrees F for the period of June through August.

Growing conditions favor warm-season vegetation, although late winter and late summer precipitation is adequate to foster a significant cool-season component in the potential plant community. Occasional wet springs also create good conditions for annual forb production, but frequent winds from the west and southwest are common during this time of year and tend to deplete soil moisture at a critical time for the growth of these plants.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	102	148
Freeze-free period (days):	119	174
Mean annual precipitation (inches):	10	16

Monthly moisture (inches) and temperature (°F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.40	.91	12.9	47.0
February	.43	.65	16.6	51.2
March	.47	1.10	20.9	57.1
April	.30	.49	26.1	65.3
May	.46	.98	33.4	74.2
June	.51	.57	41.4	84.2
July	2.15	3.45	50.4	85.1
August	2.28	3.03	48.8	82.4
September	1.29	1.68	41.4	77.9
October	.81	1.12	29.4	69.2
November	.38	.71	19.1	57.3
December	.53	.95	13.1	48.9

Climate Stations:

				Period	
Station ID	<u>290640</u>	Location	<u>Augustine 2E, NM</u>	From:	<u>05/01/26</u> To: <u>07/31/00</u>
Station ID	<u>296812</u>	Location	<u>Pietown 19NE, NM</u>	From:	<u>09/01/88</u> To: <u>07/31/00</u>
Station ID	<u>297180</u>	Location	<u>Quemado, NM</u>	From:	<u>08/01/15</u> To: <u>07/31/00</u>

INFLUENCING WATER FEATURES**Narrative:**

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

Surface textures vary from fine sandy loams, loams, clay loams and silty clay loams. Rock fragments range from 0 to 35 percent. The soils are very shallow to shallow over basalt and may be calcareous in the surface or subsoils. Subsoils are moderately fine and fine textured. Water permeability is moderate to slow. Depending on depth, available water-holding capacity is very low to low.

Parent Material Kind: Volcanic ash

Parent Material Origin: Basalt

Surface Texture:

1. Fine sandy loam
2. Loam
3. Clay loam
4. Silty clay loam

Surface Texture Modifier:

1. Stony
2. Cobbly
3. Gravel

Subsurface Texture Group: Loamy

Surface Fragments ≤3" (% Cover): 15 to 35

Surface Fragments >3" (% Cover): 15 to 35

Subsurface Fragments ≤3" (%Volume): 15 to 35

Subsurface Fragments ≥3" (%Volume): 35 to 60

	Minimum	Maximum
Drainage Class:	<u>Well</u>	<u>Well</u>
Permeability Class:	<u>Slow</u>	<u>Moderate</u>
Depth (inches):	<u>14</u>	<u>35</u>
Electrical Conductivity (mmhos/cm):	<u>0</u>	<u><2</u>
Sodium Absorption Ratio:	<u>N/A</u>	<u>N/A</u>
Soil Reaction (1:1 Water):	<u>6.6</u>	<u>7.3</u>
Soil Reaction (0.1M CaCl₂):	<u>N/A</u>	<u>N/A</u>
Available Water Capacity (inches):	<u>0</u>	<u>6</u>
Calcium Carbonate Equivalent (percent):	<u>N/A</u>	<u>N/A</u>

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label:** HCPC

Plant Community Narrative: Historic Climax Plant Community

Perennial grasses dominate this site, characterized by such species as blue grama, sideoats grama, little bluestem, western wheatgrass, spike muhly, and species of Hesperostipa. Shrubs and half-shrubs may include shrub live oak, skunkbush sumac, and winterfat. Wright buckwheat may be the most common native forb.

Canopy Cover:

Trees 7 %

Shrubs and half shrubs 7 %

Ground Cover (Average Percent of Surface Area).

Grasses & Forbs 23

Bare ground 8

Surface gravel 15

Surface cobble and stone 40

Litter (percent) 14

Litter (average depth in cm.) 2

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	340	610	880
Forb	43	77	110
Tree/Shrub/Vine	43	77	110
Lichen			
Moss			
Microbiotic Crusts			
Total	425	763	1,100

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOGR2	Blue Grama	153 – 191	153 – 191
2	BOCU	Sideoats Grama	76 – 114	76 – 114
3	PASM SPAI MUWR	Western Wheatgrass Alkali Sacaton Spike Muhly	76 – 114	76 – 114
4	BOER4	Black Grama	8 – 38	8 – 38
5	HENE2 HECO26	New Mexico Feathergrass Needleandthread	38 – 114	38 – 114
6	SCSC BOBA3	Little Bluestem Cane Bluestem	8 – 38	8 – 38
7	PLJA PLMU3	Galleta Tobosa	8 – 38	8 – 38
8	HIBE SPORO	Curly Mesquite Dropseed spp.	23 – 38	23 – 38
9	ARIST	Threawn spp.	8 – 23	8 – 23
10	ELEL5	Bottlebrush Squirreltail	8 – 23	8 – 23
11	LYPH	Wolftail	8 – 23	8 - 23

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
12	ERWR ERAN4	Wright Buckwheat Annual Buckwheats	8 – 38	8 – 38
13	2FA	Other Annual Forbs	8 – 38	8 – 38
14	2FP	Other Perennial Forbs	8 – 23	8 - 23

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
15	QUERC	Shrub Live Oak spp.	8 – 23	8 – 23
16	PIED JUNIP	Pinyon Pine Juniper	8 – 46	8 – 46
17	ERNAN5 FAPA	Rubber Rabbitbrush Apacheplume	8 – 23	8 – 23
18	KRLA2	Winterfat	23 – 61	23 – 61
19	RHTR	Skunkbush Sumac	8 – 23	8 – 23
20	GUSA2	Broom Snakeweed	0 – 8	0 - 8

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Growth CurvesGrowth Curve ID 0301NMGrowth Curve Name: HCPCGrowth Curve Description: Mixed warm/cool-season perennial grassland w/ shrub and half-shrub component.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	5	7	10	15	25	25	8	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitat which can support a resident animal community characterized by mule deer, rock squirrel, brush mouse, Stephen's woodrat, gray fox, bobcat, scaled quail, ladderbacked woodpecker, scrub jay, common bushtit, rock wren, brown towhee, rufous-crowned sparrow, chipping sparrow, ash-throated flycatcher, short-horned lizard, collared lizard, Eastern fence lizard, tree lizard, red-spotted toad, and black-tailed rattlesnake.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations

Soil Series	Hydrologic Group
Apache	D
Cabazon	D
Flaco	C
Modyon	C
Prieta	D
Rudd	D
Thunderbird	D
Viuda	D

Recreational Uses:

This site offers recreation potential for hiking, picnicking, camping, nature observation and photography, bird watching, and hunting for mule deer, mourning dove, and quail. When favorable growing-season moisture conditions occur, a colorful display of wildflowers may be seen.

Wood Products:

This site has little or no significant value for wood products.

Other Products:

Grazing:

This site is suitable for grazing in all seasons of the year. It is best adapted for cattle and horses, but can also be utilized by sheep and goats. Continuous yearlong grazing may, however, result in a decline or disappearance of cool-season grasses and preferred browse plants. If grazing use is heavy or prolonged, such plants as sideoats grama, little bluestem, spike muhly, and black grama will also decrease. Ordinarily, as retrogression continues, blue grama, tobosa or galleta, curly mesquite, threeawns, and broom snakeweed begin to dominate. Eventually, even blue grama may decline. The site is not highly erodible, and recovery can be affected through good grazing management at a reasonably rapid rate.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	3.0 – 4.2
75 – 51	4.0 – 6.5
50 – 26	6.0 – 10.0
25 – 0	10.0+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock

Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Little Bluestem	Schizachyrium scoparium	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Green Sprangletop	Leptochloa dubia	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Spike Muhly	Muhlenbergia wrightii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Wright Buckwheat	Eriogonum wrightii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

Animal Kind: Livestock

Animal Type: Horses

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue Grama	Bouteloua gracilis	EP	D	D	D	D	P	P	P	P	P	D	D	D
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Green Sprangletop	Leptochloa dubia	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Vine-mesquite	Panicum obtusum	EP	D	D	D	D	D	D	D	D	D	D	D	D
Spike Muhly	Muhlenbergia wrightii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Cane Bluestem	Bothriochloa brabinodis	EP	U	U	U	U	U	U	P	P	D	U	U	U

Animal Kind: Wildlife

Animal Type: Mule deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Juniper	Juniperus spp.	F/S	P	P	U	U	U	U	U	U	U	U	U	P
Shrub Live Oak	Quercus spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Skunkbush Sumac	Rhus trilobata	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
New Mexico Feathergrass	Hesperostipa neomexicana	EP	U	U	D	D	D	U	U	U	D	D	D	U
Wildbuckwheat	Eriogonum spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Winterfat	Krascheninnikovia lanata	EP	D	D	D	D	D	D	D	D	D	D	D	D
Most Other Forbs	Various	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: New Mexico

County: Catron, McKinley, Valencia

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes ☐ No ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the New Mexico and Arizona Plateaus and Mesas 36 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: McKinley, Cibola, Sandoval.

Characteristic Soils Are:

Apache	Prieta
Berto	

Other Soils included are:

Cabezon	Flaco
Modyon	Rudd
Thunderbird	Viuda

Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	05/21/84	Don Sylvester	05/21/84

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	07/08/02	George Chavez	12/16/02